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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 3

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|------------------------|----------------------|
| Application Number | 10/600,345 |
| Filing Date | 23 Jun 2003 |
| First Named Inventor | Anthony, E.J. et al. |
| Art Unit | Unknown 1754 |
| Examiner Name | Unknown HERTZOG |
| Attorney Docket Number | 1004P60US01 |

U. S. PATENT DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Document Number | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear |
|--------------------|-----------------------|--|--------------------------------|--|---|
| | | Number-Kind Code ² (if known) | | | |
| | AA | US- 3,688,438 | 09-05-1972 | Slater et al. | |
| | AB | US- 3,709,669 | 01-09-1973 | Marion et al. | |
| | AC | US- 3,922,148 | 11-25-1975 | Child | |
| | AD | US- 3,944,486 | 03-16-1976 | Kwon | |
| | AE | US- 4,102,989 | 07-25-1978 | Wheelock | |
| | AF | US- 4,216,197 | 08-05-1980 | Moss | |
| | AG | US- 4,262,610 | 04-21-1981 | Hein et al. | |
| | AH | US- 4,321,242 | 03-23-1982 | Feinman et al. | |
| | AI | US- 4,370,161 | 01-25-1983 | Turkdogan | |
| | AJ | US- 4,410,336 | 10-18-1983 | Blaskowski | |
| | AK | US- 4,424,197 | 01-03-1984 | Powell et al. | |
| | AL | US- 4,435,148 | 03-06-1984 | Moss | |
| | AM | US- 4,503,785 | 03-12-1985 | Scocca | |
| | AN | US- 4,602,573 | 07-29-1986 | Tanca | |
| | AO | US- 4,609,541 | 09-02-1986 | Calderon | |
| | AP | US- 4,624,192 | 11-25-1986 | Mansfield | |
| | AQ | US- 4,635,572 | 01-13-1987 | Nickel | |
| | AR | US- 4,686,090 | 08-11-1987 | Howell et al. | |
| | AS | US- 4,704,136 | 11-03-1987 | Weston et al. | |

FOREIGN PATENT DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | Publication Date MM-DD-YYYY | Name of Patentee or Applicant of Cited Document | Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear | T ⁶ |
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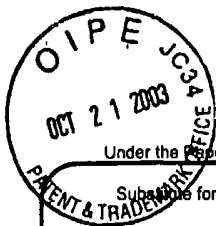
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| Examiner Name | Unknown HERT2067 |
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Sheet 2 of 3

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|-----------------------|--------------------------|--|--------------------------------|--|---|
| | | Number-Kind Code ² (if known) | | | |
| | AT | US- 4,722,832 | 02-02-1988 | Weston et al. | |
| | AU | US- 4,738,207 | 04-19-1988 | Moss | |
| | AV | US- 4,913,068 | 04-03-1990 | Brannstrom | |
| | AW | US- 5,027,723 | 07-02-1991 | Landreth et al. | |
| | AX | US- 5,228,399 | 07-20-1993 | Weathery | |
| | AY | US- 5,396,849 | 03-14-1995 | Boyd | |
| | AZ | US- 5,551,357 | 09-03-1996 | Wu et al. | |
| | AAA | US- 5,653,955 | 08-05-1997 | Wheelock | |
| | AAB | US- 5,662,051 | 09-02-1997 | Morin | |
| | AAC | US- 6,083,862 | 07-04-2000 | Wheelock | |
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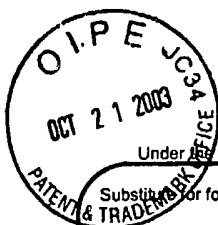
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| Sheet | 3 | of | 3 |
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NON PATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
|--------------------|-----------------------|---|----------------|
| | BA | The British Coal Spouted Fluidized Bed Gasification Process. The Canadian Journal of Chemical Engineering, Volume 70, October, 1992, 991-997 | |
| | BB | The Rate and the Fundamental Mechanisms of the Reaction of Hydrogen Sulfide with the Basic Minerals in Coal. Ind. Eng. Chem. Process Des. Dev. 1979, 18, 607-618 | |
| | BC | Reaction of H ₂ S and Sulfur with Limestone Particles. Ind. Eng. Chem. Process Des. Dev. 1984, 23, 742-748 | |
| | BD | The Sulphidation of Calcined Limestone with Hydrogen Sulphide and Carbonyl Sulphide. Chem. Eng. Sci. 1995, 50, 2983-2996 | |
| | BE | Regeneration of Calcium Sulfide under Alternating Oxidizing and Inert Conditions: Kinetics and Mechanism. Ind. Eng. Chem. Res. 1998, 37, 923-928 | |
| | BF | Regeneration of Sulfided Calcium-Based Sorbents by a Cyclic Process. Energy & Fuels. 1996, 10, 821-827 | |
| | BG | CaS Oxidation by Reaction with CO ₂ and H ₂ O. E.J. Anthony, L. Jia and K. Qiu, CETC, Natural Resources Canada, 1, Haanel Dr., Ottawa, Canada K1A 1M1 | |
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| Examiner Signature | | Date Considered | 7.8.04 |
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